



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,408	04/15/2004	Masaru Kawai	056207.53989US	6482
23911 7590 06/03/2008 CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300			EXAMINER CAZAN, LIVIUS RADU	
			ART UNIT	PAPER NUMBER
			3729	
			MAIL DATE	DELIVERY MODE
			06/03/2008 PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/824,408

Applicant(s)

KAWAI ET AL.

Examiner

LIVIOUS R. CAZAN

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SG/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. **Regarding claim 1**, the phrase “the immediate blank” (line 5) lacks proper antecedent basis. Also, the phrase “from a radial direction” (line 7) renders the claim indefinite because, as currently claimed, it is impossible to ascertain the nature of this radial direction, i.e. radial direction of/with respect to what? As currently claimed, the radial direction could be any direction. In line 9, “pole claw” should read --pole claws--.

4. **Regarding claim 2**, it is unclear what is meant by “by a same process for applying the forming force”. Specifically, it is unclear whether the same process is applied yet again, or if it is meant that the tapered surface and the permanent-magnet fastener are formed during the applying of the forming force.

5. **Regarding claim 3**, it is unclear what is meant by “by simultaneously applying the forming force. The claim should either recite --simultaneously with applying the forming force—or --by simultaneously applying the forming force and the _____--, where the blank space stands for some structural element or method step. As currently claimed, claim 3 is not grammatically correct, and it is unclear exactly what is meant.

6. **Regarding claim 8**, the claim should be rewritten, since it does not have a transition phrase such as "wherein" or "further comprising" between "Claim 1," and "the permanent-magnet". Moreover, the phrase "the permanent-magnet fastener is trimmed off any unnecessary portion thereof" is grammatically incorrect and renders the claim indefinite since it is unclear exactly what is being claimed.

7. **Regarding claim 10**, it is unclear what is meant by the phrase "wherein the intermediate blank and the magnetic pole claw together are joined to be effected". It would appear the claim requires the claws and the blank to be joined, but claim 1 recites the blank already having the claws. It is therefore unclear exactly what is being claimed in claim 10. Further, it is unclear what is meant by "from the plate portion that operatively associates the magnetic pole claws of the intermediate blank with each other". Again, it would appear the claim is directed to joining the claws to a plate and somehow associating the claws with each other. Clarification is requested.

8. **Regarding claim 11**, it is unclear what is meant by "forging ... surface of the magnetic pole claws", since, as currently claimed, it would appear the magnetic pole claws protrude on a circumference of the intermediate blank and an inner peripheral surface of the magnetic pole claws. Clarification is requested. The phrase "from a radial direction" (ln. 7) renders the claim indefinite. See the corresponding discussion presented above with respect to claim 1. In line 9, "claw" should be changed to -claws-. The phrase "to an outer peripheral end" (lines 9 and 10) renders the claim indefinite, since it is unclear whether this peripheral end is the same as the outer peripheral end recited in line 8. As currently claimed, it is unclear how this outer peripheral end is

related to the recited structure. Likewise, it is unclear where the recited "inner peripheral end" (line 12) is located relative to the other structural elements.

9. **Regarding claim 12**, see the discussion concerning the inner and outer peripheral ends in claim 11. As currently claimed, it is unclear which of the outer peripheral ends of claim 11 corresponds to the peripheral end recited in claim 12.

10. **Regarding claim 14**, in line 2, "claw" should read —claws—.

Claim Rejections - 35 USC § 103

11. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

12. **Claims 1-14, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (US20020138968 to Kato et al.) in view of Habert (US3714484).**

13. **Regarding claims 1-3 and 11**, Kato discloses forging a rotor core (6, Figs. 3-5) to be fixed around a facing rotary shaft (page 6, para. [0093]), constraining by a die (113, 114, Fig. 7) an intermediate blank (61, Fig. 7a) having multiple magnetic pole claws (41, Fig. 7a) that protrude in the same direction on a circumference of the intermediate blank and an inner peripheral surface of the magnetic pole claw, applying a forming force from a radial direction and causing a local plastic flow to an outer peripheral end of each of the magnetic pole claws so as to form a tapered surface an outer peripheral end and a permanent-magnet fastener on an inner peripheral end, the tapered surface and the magnet fastener being formed by a same process for applying the forming force by simultaneously applying the forming force (see rejection under 35 U.S.C. 112, 2nd paragraph); clearly forming pressure is applied in a radial direction,

since the claws are deformed inwardly, from the shape of Fig. 7a to that of Fig. 7b; see para. [0082] on pages 5 and 6. Moreover, it is inherent that there would be plastic flow as claimed, since the blank is being pressed by the die. Also see the rejection under 35 U.S.C. 112, 2nd paragraph.

14. However, Kato does not disclose forming a tapered surface on only one of the outer peripheral ends of each magnetic pole claw.

15. Habert teaches forming a tapered surface on only one outer peripheral end of each pole claw, in order to reduce noise (see Figs. 4-8; see col. 2, lns. 28-46).

16. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Kato, in view of the teachings of Habert, by utilizing a set of dies which create a well-defined tapered surface on one of the outer peripheral ends of each pole claw. One of ordinary skill in the art would have been motivated to do so in order to address the issue of noise. Further, at the time the invention was made, it would have been obvious to one of ordinary skill in the art to create a set of dies that would result in a rotor having a tapered surface as claimed, given Habert's teaching of forming such a tapered surface to reduce noise. Since a desired shape is known, forming a suitable die to produce the desired shape would have been obvious to one of ordinary skill in the art. Moreover, utilizing such a die would have resulted in simultaneously forming the tapered surface and the magnet fastener in the same process. See the *Response to Arguments* below.

17. **Regarding claim 4** a die having multiple component parts (113, 114) constrains the intermediate blank and the inner peripheral surface of each magnetic pole claw (see Fig. 7).
18. **Regarding claims 5-7 and 12-14**, as modified in view of Habert, the tapered surface is on the outer peripheral side of the pole claws, and the magnet fasteners are on the inner peripheral side (see Fig. 13b; see para. [0087] on page 6). All the magnetic pole claws are formed at the same time, the inner peripheral surfaces of the claws being simultaneously and individually constrained by a die 113 and 114 (see Fig. 7).
19. **Regarding claim 8**, unnecessary portions (8, Fig. 11b) are trimmed off from the core, including from the permanent magnet fastener (para. [0090] on page 6).
20. **Regarding claim 9**, clearly pressing the core between dies 113 and 114 (Fig. 7) adjusts the volume of the magnet fasteners and tapered surface. Further adjustment is performed in a re-pressing operation as shown in Fig. 10.
21. **Regarding claim 10**, the constraint force is applied from the plate portion (3, Fig. 7a).

Response to Arguments

22. Applicant's arguments filed 3/11/2008 have been fully considered but they are not persuasive.
23. Specifically, Applicants argue Kato and Habert suggest nothing "about constraining an intermediate blank and an inner peripheral surface of the magnetic pole claw and applying a forming pressure from a radial direction and causing a local plastic flow to an outer peripheral end of each of the magnetic pole claw[s], thereby forming a

tapered surface on only one side of the outer peripheral end and a permanent-magnet fastener on an inner peripheral end simultaneously by the same process." Applicant argues Kato discloses forming only the permanent-magnet fastener and that the direction of forming is completely different from that of the present invention. Applicants also argue that Habert does not disclose a tapered surface that is formed simultaneously with a magnet fastener in the same process.

24. The Examiner respectfully disagrees. For clarity, it should be noted the independent claims do not recite forming the fastener and the tapered surface simultaneously and that the rejection relies on the combined teachings of Kato and Habert, not on either of the references by itself. The forming force applied by the dies is indeed in a radial direction, at least to the extent a component of this forming force is in the radial direction. As can be seen in Figs. 7(a) and 7(b), the blank is deformed radially inward. Clearly there is a radial force. The second main point of the applied rejection is that the concept of a tapered surface on only one side of an outer peripheral end of a claw is known in the art, and that obtaining this shape during the forming operation of the rotor using the pair of dies would have been obvious to one of ordinary skill in the art. Particularly, since a desired shape is known, making a die to obtain the desired shape would have been obvious to one of ordinary skill in the art. The claims are currently sufficiently broad that they do not directly recite that the forming force and the plastic flow form the tapered surface. Rather, the claims require a radial force and plastic flow (which, inherently, is toward the top of the claws as seen in Figs. 7(a) and 7(b)), and that at some point a tapered surface is formed. The third aspect of the

rejection is that given suitable dies to produce the claimed tapered surface, this would take place in the same process as forming the magnet fastener, because Kato already teaches forming the entire rotor core in the same process, and it would therefore be obvious to do the same using modified dies.

Conclusion

25. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **LIVIOUS R. CAZAN** whose telephone number is (571)272-8032. The examiner can normally be reached on M-T 6:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (571)272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. Dexter Tugbang/
Primary Examiner
Art Unit 3729

/L. R. C./ 5/26/2008
Examiner, Art Unit 3729